



## Research Methodology – Quantitative

This third R Lab contains a set of exercises about Personality measures (Big Five Questionnaire) and evaluation of Online platforms. The data set `DATIDB5.csv` contains the variables described in the Case Study 2 pdf file.

**Exercise 1.1** Load the data file `DATIDB5.csv` in the R package and assign it to a data frame called `D`.

**Exercise 1.2** Compute the five dimensions (D1, D2, ..., D5) of the Big 5 questionnaires (short version) according to the rule described in the Case Study 2 document (watch also the corresponding video-lecture).

**Exercise 1.3** Construct two new variables called `D15` and `D23`, such that for each individual `D15` is the sum of the `D1` score and the `D5` score; similarly, `D23` is the sum of the `D2` score and `D3` score.

**Exercise 1.4** Evaluate if the population mean of `D15` is significantly larger than the population mean of `D23`.

**Exercise 1.5** Evaluate if the population mean of `D15` for the male group is significantly different from the population mean of `D15` for the female group (do not assume that the variances are equivalent). Repeat the analysis for `D23`, this time by assuming homogeneity of the variance between the two populations.

**Exercise 1.6** Evaluate if the population mean of `D15` for students belonging to the first two academic years is significantly smaller than the population mean of `D15` for students belonging to the last three academic years (without homogeneity of variance assumption).

**Exercise 1.7** Evaluate if `Age` is significantly different from 23.